Patent claims:

1. A moldable-foam molding whose density is in the range from 8 to 200 g/l, obtainable via fusion of prefoamed foam beads composed of expandable pelletized thermoplastic polymer materials, wherein the pelletized polymer materials comprise from 1 to 50% by weight, based on polymer, of a filler selected from talc, chalk, kaolin, aluminum hydroxide, magnesium hydroxide, aluminum nitrite, aluminum silicate, calcium carbonate, calcium sulfate, silica, powdered quartz, Aerosil, alumina, or glass beads.

2. The moldable-foam molding according to claim 1, wherein more than 80% of the cells of the individual foam beads are of closed-cell type.

3. The moldable-foam molding according to claim 1 or 2, which comprises, as thermoplastic polymer, a styrene polymer.

4. The moldable-foam molding according to any of claims 1 to 3, wherein the proportion of the filler is from 5 to 30% by weight, based on the thermoplastic polymer.

5. The moldable foam according to any of claims 1 to 4, wherein the filler has an average particle diameter in the range from 1 to 50 µm.

6. The moldable foam according to any of claims 1 to 5, which also comprises from 0.1 to 10% by weight of carbon black or graphite.

7. An expandable pelletized thermoplastic polymer material which comprises from 5 to 50% by weight of a filler selected from talc, chalk, kaolin, aluminum hydroxide, aluminum nitrite, aluminum silicate, calcium carbonate, calcium sulfate, silica, powdered quartz, Aerosil, alumina, or glass beads.

8. The expandable pelletized thermoplastic polymer material according to claim 7, which comprises

   a) from 5 to 50% by weight of a filler, selected from talc, chalk, kaolin, aluminum hydroxide, aluminum nitrite, aluminum silicate, calcium carbonate, calcium sulfate, silica, powdered quartz, Aerosil, alumina, or glass beads, and

   b) from 2 to 40% by weight of expandable graphite with an average particle size in the range from 10 to 1000 µm,

c) from 0 to 20% by weight of red phosphorus or an organic or inorganic phosphate, phosphite or phosphonate,

d) from 0 to 10% by weight of carbon black or graphite.

9. The expandable pelletized thermoplastic polymer material according to claim 7 or 8, which comprises from 3 to 7% by weight of an organic blowing agent.

10. A process for preparing expandable pelletized thermoplastic polymer materials, encompassing the steps of

a) using a static or dynamic mixer at a temperature of at least 150°C to incorporate an organic blowing agent and from 5 to 50% by weight of a filler into the polymer melt,

b) cooling the filled polymer melt comprising blowing agent to a temperature of at least 120°C,

c) discharge via a die plate with holes whose diameter at the discharge from the die is at most 1.5 mm, and

d) pelletizing the melt comprising blowing agent directly downstream of the die plate under water at a pressure in the range from 1 to 20 bar.

11. A process for producing moldable-foam moldings according to claim 1, which comprises using hot air or steam to prefoam expandable pelletized thermoplastic polymer materials according to claim 7 in a first step to give foam beads whose density is in the range from 8 to 200 g/l, and fusing the material in a second step in a closed mold.